

## AMENDMENT

### Listing of Claims

The following listing of claims replaces all prior versions.

- 1           1.       (Currently amended) A system for reassembling asynchronous transfer  
2 mode (ATM) data in real time, comprising:  
3           a circular buffer for storing ATM data, the ATM data comprising information  
4 divided into ATM cells, the ATM cells comprising at least one of virtual path identifier  
5 (VPI) information, virtual channel identifier (VCI) information and channel identifier  
6 (CID) information;  
7           a content addressable memory configured to receive any of the VPI, VCI and  
8 CID information related to each ATM cell and configured to provide an index when  
9 particular VPI, VCI and CID information is identified, the index corresponding to  
10 unique VPI/VCI and VPI/VCI+CID combinations, the index placed in the circular  
11 buffer and used to determine an AAL mode of each ATM cell; and  
12           a plurality of parallel processing elements configured to analyze the ATM cells  
13 and determine a cell type, wherein ATM adaptation layer (AAL) 2 cells and AAL 5  
14 cells are reassembled in real-time.
- 1           2.       (Previously presented) The system of claim 1, wherein the circular  
2 buffer communicates with the plurality of parallel processing elements simultaneously.
- 1           3.       (Original) The system of claim 2, further comprising a fragmentation  
2 table configured to receive and store data fragments associated with an ATM cell.
- 1           4.       (Original) The system of claim 3, further comprising a buffer manager  
2 configured to accumulate the data fragments and assemble the data fragments into a  
3 frame.
- 1           5.       (Original) The system of claim 4, further comprising a statistics  
2 memory configured to store statistics associated with the cells.

1           6.       (Original) The system of claim 5, wherein the statistics are chosen from  
2           an idle cell, an unassigned cell, an operation and maintenance (OAM) cell, an AAL 2  
3           cell, an AAL 5 cell, a header error correction (HEC) error cell, a frame count, a byte  
4           count, congestion information, AAL5 CRC error count, and resource management  
5           (RM) cell count.

1           7.       (Original) The system of claim 6, wherein the statistics are gathered for  
2           each unique VPI/VCI cell stream.

1           8.       (Previously presented) The system of claim 7, wherein the statistics are  
2           periodically provided to a processor for display.

1           9.       (Currently amended) A method for reassembling asynchronous transfer  
2           mode (ATM) data in real time, comprising:  
3           providing ATM data to a circular buffer, the ATM data comprising information  
4           divided into ATM cells, the ATM cells comprising at least one of virtual path identifier  
5           (VPI) information, virtual channel identifier (VCI) information and channel identifier  
6           (CID) information;  
7           receiving in a content addressable memory any of the VPI, VCI and CID  
8           information related to each ATM cell;  
9           storing the ATM data in the circular buffer;  
10          providing an index when particular VPI, VCI and CID information is identified,  
11          the index corresponding to unique VPI/VCI and VPI/VCI+CID combinations, the  
12          index placed in the circular buffer and used to determine an AAL mode of each ATM  
13          cell; and  
14          analyzing the ATM cells to determine a cell type, wherein ATM adaptation  
15          layer (AAL) 2 cells and AAL 5 cells are reassembled in real-time.

1           10.       (Previously presented) The method of claim 9, further comprising  
2           simultaneously communicating between the circular buffer and a plurality of  
3           processing elements.

1           11.   (Previously presented) The method of claim 10, further comprising  
2 receiving and storing data fragments associated with an ATM cell in a fragmentation  
3 table.

1           12.   (Original) The method of claim 11, further comprising:  
2 accumulating the data fragments in a buffer manager; and  
3 assembling the data fragments into a frame.

1           13.   (Original) The method of claim 12, further comprising storing statistics  
2 associated with the cells in a statistics memory.

1           14.   (Original) The method of claim 13, wherein the statistics are chosen  
2 from an idle cell, an unassigned cell, an operation and maintenance (OAM) cell, an  
3 AAL 2 cell, an AAL 5 cell, a header error correction (HEC) error cell, a frame count, a  
4 byte count, congestion information, AAL5 CRC error count, and resource management  
5 (RM) cell count.

1           15.   (Original) The method of claim 14, wherein the statistics are gathered  
2 for each unique VPI/VCI cell stream.

1           16.   (Original) The method of claim 15, further comprising periodically  
2 providing the statistics to a processor for display.

1           17.   (Currently amended) A computer readable medium having a program  
2 stored thereon for reassembling asynchronous transfer mode (ATM) data in real time,  
3 comprising:

4           logic for providing ATM data to a circular buffer, the ATM data comprising  
5 information divided into ATM cells, the ATM cells comprising at least one of virtual  
6 path identifier (VPI) information, virtual channel identifier (VCI) information and  
7 channel identifier (CID) information;

8           logic for receiving in a content addressable memory any of the VPI, VCI and

9 CID information related to each ATM cell;  
10 logic for storing the ATM data in the circular buffer;  
11 logic for providing an index when particular VPI, VCI and CID information is  
12 identified, the index corresponding to unique VPI/VCI and VPI/VCI+CID  
13 combinations, the index placed in the circular buffer and used to determine an AAL  
14 mode of each ATM cell; and  
15 logic for analyzing the ATM cells to determine a cell type, wherein ATM  
16 adaptation layer (AAL) 2 cells and AAL 5 cells are reassembled in real-time.

1 18. (Previously presented) The computer readable medium of claim 17,  
2 further comprising logic for simultaneously communicating between the circular buffer  
3 and a plurality of processing elements.

1 19. (Previously presented) The computer readable medium of claim 18,  
2 further comprising logic for receiving and storing data fragments associated with an  
3 ATM cell in a fragmentation table.

1 20. (Previously presented) The computer readable medium of claim 19,  
2 further comprising:  
3 logic for accumulating the data fragments in a buffer manager; and  
4 logic for assembling the data fragments into a frame.

1 21. (Previously presented) The computer readable medium of claim 20,  
2 further comprising storing statistics associated with the cells in a statistics memory.

1 22. (Previously presented) The computer readable medium of claim 21,  
2 wherein the statistics are chosen from an idle cell, an unassigned cell, an operation and  
3 maintenance (OAM) cell, an AAL 2 cell, an AAL 5 cell, a header error correction  
4 (HEC) error cell, a frame count, a byte count, congestion information, AAL5 CRC  
5 error count, and resource management (RM) cell count.

1           23.   (Previously presented) The computer readable medium of claim 22,  
2   wherein the statistics are gathered for each unique VPI/VCI cell stream.

1           24.   (Previously presented) The computer readable medium of claim 23,  
2   further comprising logic for periodically providing the statistics to a processor for  
3   display.